

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

To:

see form PCT/ISA/220

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/B2004/003550

International filing date (day/month/year)
29.10.2004

Priority date (day/month/year)
19.11.2003

International Patent Classification (IPC) or both national classification and IPC
B60L3/00, G01R31/00

Applicant
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1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**International application No.
PCT/IB2004/003550

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material:
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing:
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/IB2004/003550

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-7
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-7
Industrial applicability (IA)	Yes: Claims	1-7
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the document EP 1 281 562 A2 (D1)

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 1 and 7 does not involve an inventive step in the sense of Article 33(3) PCT.

The document D1 discloses (the references in parentheses applying to this document):

The subject-matter of claims 1 and 7 differ from the abnormality detection apparatus and method described in D1 only by a non-substantial modification.

According to the present invention the difference value between a detected battery voltage value and an estimated battery voltage value and the difference value between a detected converter output voltage value and said estimated battery voltage value. Then, these two difference values and a predetermined threshold value are taken as basis for monitoring an abnormality in a detection means.

Document D1 discloses that differences between two pairs of detected voltage values (page 11, lines 6 and 15: $\Delta V_{mg} = |V_M - V_G|$ and $\Delta V_{gb} = |V_G - V_B|$) are calculated and then compared to first and second threshold values (V_{th1} and V_{th2}) in order to determine which one of the detecting means (72, 75 or 76) is abnormal [see sections 0006 on page 2 and 0130-0132 on page 1.1].

Hence, the slight difference is set out in that the present invention calculates two difference values with respect to one reference value (estimated battery voltage value) and carries out the monitoring on the basis of the relations of these difference values to a threshold value whereas a/the prior art disclosed in D1 calculates a first difference value (ΔV_{mg}) and compares it to a first reference value (V_{th1}) and uses the result of this comparison in combination with the result of the comparison of a second difference value (ΔV_{gb}) with a second threshold value (V_{th2}) to identify the abnormal voltage sensor.

This distinguishing procedural detail is not considered to justify an inventive step with respect to D1 because it constitutes an obvious alternative solution to the problem

underlying the present invention (monitoring abnormality of sensors).

Dependent claims 2-6 do not contain any features which, in combination with the features of any claim to which they refer, result in an inventive subject-matter because the merely concern obvious embodiments of the invention claimed in claim 1.

The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).

Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the document D1 is not mentioned in the description, nor is/are this/these document/s identified therein.